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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/724,514

11/26/2003

Sim Dong-Hi

2060-3-92A

1835

35884

7590

11/17/2009

LEE, HONG, DEGERMAN, KANG & WAIMEY

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EXAMINER

GHULAMALI, QUTBUDDIN

ART UNIT

PAPER NUMBER

2611

NOTIFICATION DATE

DELIVERY MODE

11/17/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

uspto@hlaw.com

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|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/724,514 | DONG-HI ET AL. | |
| | Examiner | Art Unit | |
| | Qutbuddin Ghulamali | 2611 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 38-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 38-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/10/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is responsive to amendment filed 7/22/2009.

Response to Remarks

2. Applicant's remarks filed 7/22/2009 have been fully considered but they are not persuasive. Applicant remarks, page 5-6, Miyoshi (US Pub. 2003/0014709) does not qualify as prior art under 35 U.S.C. 103 (a). The examiner disagrees. Miyoshi's filing date is 7/31/2002 which is before applicant's priority date of 11/27/2002 and therefore, Miyoshi can be used as a prior art under 35 U.S.C. 103 (a). As per applicant's remark, page 6, regarding the amended claim limitation of only dummy bits allocation to an antenna, the remark is considered moot in view of the new art to Matsumoto '551'.
The rejection follows.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103 Miyoshi(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 38-42 are rejected under 35 U.S.C. 103 (a) as being unpatentable Kim et al (US Pub. 2002/0004924) in view of Matsumoto et al (US Pub. 2004/0190551) and further in view of Bantz et al USP 5,507,035).

Regarding claim 38, 42, Kim discloses an apparatus (method) for transmitting data using a plurality of antennas in a mobile communication system, comprising:

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a data block segmentation unit (422) segmenting a first data block into at least two second data blocks (segments a number of data blocks that could include a first block and other blocks) (page 5, section 0065);

a Cyclic Redundancy Check (CRC) attachment unit (a CRC inserter 421) attaching a CRC to each of the at least two second data blocks (page 5, section 0065, 0066, 0067).

Kim however, does not disclose allocating dummy bits to an antenna having bad channel status. However, Matsumoto discloses allocating (assign) dummy bits for transmission, that is, dummy bits are assigned to the portion of the data transmission time to which the data to be transmitted has not assigned, in other words only the dummy bits are assigned for transmission to antenna that is not used for transmission of data (page 5, section 0046, 0047, 0048). A person of ordinary skill in the art at the time the invention was made would be motivated to use the teachings of Matsumoto in the art of Kim to assign or allocate dummy bits for transmission via an antenna because it can minimize or suppress errors with transmission of data, and help minimize the transmission delays with repeat transmission of data. Kim and Matsumoto combined does not explicitly disclose using data blocks using antenna having good channel status and dummy bit using antenna having bad channel status. However, Bantz discloses use of multiple antennas wherein a preferred antenna (good antenna) selection strategy can be used based on the received channel data quality measured at each antenna/receiver branch and information used in the selection of the good or preferred antenna (col. 2, lines 29-45; col. 3, lines 10-22). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to using antenna

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selection strategy for transmission of data using good antenna and using antenna of less quality most conveniently in the system of Kim and Miyoshi because it can result in improved transmission of actual data. As per “a feedback signal reception unit receiving channel status information for each of the plurality of antennas from a receiving side”; the generally used and well known MIMO transmission techniques based on OFDM that work similar to V-BLAST wherein data stream is partitioned into multiple independent blocks wherein a full or maximum channel state information of every OFDM subchannel is available to transmitter via the feedback channel from receiver to transmitter for optimizing selection of transmit antennas would be readily available to a person of skill in the art to make use of.

Regarding claims 39, 43, wherein dummy are predefined between apparatus and receiver is implicitly implied.

Regarding claims 40, 44, Kim discloses CRC is differently attached to each of the blocks (fig. 4).

Regarding claims 41, 45, Kim, discloses channel status information is a positive acknowledgement (ACK) or a negative acknowledgement (NACK) for each of the at least two second data blocks or the dummy bits which has been transmitted via each of the plurality of antennas (page 2, sections 0018, 0019, 0020, 0024).

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutbuddin Ghulamali whose telephone number is (571)-272-3014. The examiner can normally be reached on Monday-Friday, 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

QG.

November 6, 2009.

/CHIEH M FAN/

Supervisory Patent Examiner, Art Unit 2611